

Date: Thursday, 11/01/2007 10:40:40 AM  
 User: Linda Lacelle

## Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services		Drawing Name	: TUBE ASSEMBLY	
Job Number	: 29935		Part Number	: D2003109	
Estimate Number	: 11926		Drawing Number	: UNDER REVIEW	
P.O. Number	: N/A		Project Number	: N/A	
This Issue	: 11/01/2007	S.O. No. : N/A	Drawing Revision	: B	
Prsh Rev.	: NC		Material	: N/A	
First Issue	: 13/12/2006	Type : SMALL /MED FAB	Due Date	: 10/01/2007 Qty: 5 Um: Each	
Previous Run	:				
Written By	:				
Checked & Approved By	:				
Comment	: Est. C 05.04.13 Rerformat KJ/JLM				

## Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :		
1.0	M6061T6T0375W058	6061-T6 Tube .375 x.058W		
		Comment: Qty.: 0.7875 f(s)/Unit Total : 3.9375 f(s) 6061-T6 Tube .375 x.058W Cut tube Ø 0.500" x 0.035" wall as per template D2003-109 (8.125" long) Material: AISI 304 SS tubing (M304TR0.500x0.035) Batch: _____		<i>See attached</i>
2.0	M6061T6T0500W035	6061-T6 Tube .500 x.035W		
		Comment: Qty.: 0.7875 f(s)/Unit Total : 3.9375 f(s) 6061-T6 Tube .500 x.035W	m4692	mf. 07-01-11
3.0	M26506	Firesleeve-crkl .375IDia		
		Comment: Qty.: 0.7219 f(s)/Unit Total : 3.6094 f(s) Cut: 8.25" long as per Dwg D2003 and heat shrink Material: M2650-6 Heat sleeve Batch: m17521		mf. 07-01-16
4.0	D2182	Heat Shrink		
		Comment: Qty.: 0.3063 f(s)/Unit Total : 1.5314 f(s) Heat Shrink Cut: Qty Part Number Description Batch 1 D2182-035 Heat Shrink b21864		B 24615
		Cut 8.25" long Heat sleeve as per Dwg D2003 & heat shrink		mf. 07-01-16

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
07-01-16	4.						

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
 QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
07-01-16	4.	Heat Shrink on 2 tubes too much so they came off. Had to take a larger band x 2 in order to fit.		Placed & Replaced with 2 larger bands. B 24615	M.F. 07-01-16.	 07/01/16		 07/01/16

NOTE: Date & initial all entries

Date: Thursday, 11/01/2007 10:40:41 AM  
User: Linda Lacelle

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: TUBE ASSEMBLY

Job Number: 29935

Part Number: D2003109

Job Number:



Seq. #: Machine Or Operation:

Description :

5.0 SMALL FAB 1 SMALL & MEDIUM FAB RESOURCE 1



Comment: SMALL & MEDIUM FAB RESOURCE 1

Form tube as per template D2003-109

MF 07-01-12 (S)

6.0 QC5 INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

7.0 MS208198D Sleeve



Comment: Qty.: 2.0000 Each(s)/Unit Total : 10.0000 Each(s)

Sleeve

Pick:

Qty Part Number	Description	Batch
2 MS20819-8D	Sleeve	M19099

MF 07-01-16

8.0 AN8188D Nut



Comment: Qty.: 2.0000 Each(s)/Unit Total : 10.0000 Each(s)

Nut

Pick:

Qty Part Number	Description	Batch
2 AN818-8D	Nut	M101840

MF 07-01-16

9.0 SMALL FAB 1 SMALL & MEDIUM FAB RESOURCE 1



Comment: SMALL & MEDIUM FAB RESOURCE 1

Assemble as per Dwg D2003

Install Red decal and heat shrink as per PPP D2003-109

MF 07-01-16

MF 07-01-16 (S)

10.0 QC5 INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

MF 07/01/16 (S)

Date: Thursday, 11/01/2007 10:40:41 AM  
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## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: TUBE ASSEMBLY

Job Number: 29935

Part Number: D2003109

Job Number:



Seq. #: Machine Or Operation:

Description :

11.0 PACKAGING 1 PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: S14

*Box 61165 11/01/10*

12.0 QC21 FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

Job Completion



*CLO 7/01/17*

Date: Wednesday, 12/13/2006 2:47:54 PM  
 User: Kim Johnston

## Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services		Drawing Name	: TUBE ASSEMBLY		
Job Number	: 29935					
Estimate Number	: 11926					
P.O. Number	:			Part Number	: D2003109	
This Issue	: 12/13/2006	S.O. No. :		Drawing Number	: UNDER REVIEW CB 06.12.13	
Prsht Rev.	: NC			Project Number	: N/A SEE NOTE ON DWG	
First Issue	: / /	Type	: SMALL /MED FAB	Drawing Revision	: B	
Previous Run	:			Material	:	
Written By	:			Due Date	: 1/10/2007 Qty: 5 Um: Each	
Checked & Approved By	: <u>TS 06 12 14</u>					
Comment	: Est. C 05.04.13 Reformat KJ/JLM					

## Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :	
1.0	M6061T6T0375W058 	6061-T6 Tube .375 x.058W	
		Comment: Qty.: 0.7875 f(s)/Unit Total : 3.9375 f(s) 6061-T6 Tube .375 x.058W .500x0.035w Cut tube Ø 0.500" x 0.035" wall as per template D2003-109 (8.125" long) Material: AISI 304 SS tubing (M304TR0.500x0.035) Batch: <u>m18730 m4692</u>	
2.0	M26506 	Firesleeve-crkl .375IDia	
		Comment: Qty.: 0.7219 f(s)/Unit Total : 3.6094 f(s) Cut: 8.25" long as per Dwg D2003 and heat shrink Material: M2650-6 Heat sleeve Batch: _____	
3.0	D2182 	Heat Shrink	
		Comment: Qty.: 0.3063 f(s)/Unit Total : 1.5314 f(s) Heat Shrink Cut: Qty Part Number Description Batch 1 D2182-035 Heat Shrink _____  Cut 8.25" long Heat sleeve as per Dwg D2003 & heat shrink	
4.0	SMALL FAB 1 	SMALL & MEDIUM FAB RESOURCE 1	
		Comment: SMALL & MEDIUM FAB RESOURCE 1 Form tube as per template D2003-109	

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
 QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



DESIGN <i>4A</i>	DRAWN BY <i>GP</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>AE</i>	APPROVED <i>GP</i>	DRAWING NO. D2003	REV. B SHEET 1 OF 2
DATE 99.06.08		TITLE 206 CABIN HEATER TUBE ASSEMBLIES NTS	
A	90.04.09	NEW ISSUE	
B	99.06.08	UPDATE PER TEMPLATES; ADD P/N'S; 0.025 TUBING NOW 0.035 (TSR1049)	

**RELEASED**

44.06.08 RE

NOTE: FLAT LENGTHS MAYBE  
INCORRECT. BEND TO BENT  
TOOL. REPORT TO ENGINEERING

**UNDER REVIEW**

CC.08.21 CB

Some flat 06.12.13  
lengths wrong

CB

SHOP COPY  
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ENGINEERING

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SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. *29935*

P/N	TEMPLATE	HEATSLEEVE LENGTH <sup>1</sup>	CUT LENGTH OF TUBE <sup>2</sup>	MS20819-8J SLEEVE	AN818-8J NUT	MS20819-8D SLEEVE	AN818-8D NUT	MS20819-6D SLEEVE	AN818-6D NUT	DESC.	MATERIAL <sup>4&amp;5</sup>	VENDOR OR SPEC
D2003-001	T2003-001	5.2	6.00					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWV-T-700/6
D2003-003	T2003-003	7.3	8.12					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWV-T-700/6
D2003-005	T2003-005	9.8	10.62					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWV-T-700/6
D2003-007	T2003-007	20.0	19.63					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWV-T-700/6
D2003-009	T2003-009	12.38	12.44					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWV-T-700/6
D2003-011	T2003-011	33.31	32.38					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWV-T-700/6
D2003-013	T2003-013	12.7	13.54					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWV-T-700/6
D2003-015	T2003-015	17.2	18.00					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWV-T-700/6
D2003-017	T2003-017	17.0	16.25					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWV-T-700/6
D2003-019	T2003-019	9.8	10.62		2	2				TUBE ASS'Y	6061-T6 0.500 OD x 0.035 W	WWV-T-700/6
D2003-021	T2003-021	N/A	2.25		2	2				TUBE ASS'Y	6061-T6 0.500 OD x 0.035 W	WWV-T-700/6
D2003-023	T2003-023	4.5	5.33		2	2				TUBE ASS'Y	6061-T6 0.500 OD x 0.035 W	WWV-T-700/6
D2003-025	T2003-025	9.8	10.60		2	2				TUBE ASS'Y	6061-T6 0.500 OD x 0.035 W	WWV-T-700/6
D2003-027	T2003-027	7.25	7.38		2	2				TUBE ASS'Y	6061-T6 0.500 OD x 0.035 W	WWV-T-700/6
D2003-029	T2003-029	17.2	18.00		2	2				TUBE ASS'Y	6061-T6 0.500 OD x 0.035 W	WWV-T-700/6
D2003-031	T2003-031	14.6	15.38	2	2					TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304
D2003-033	T2003-033	29.75	29.62	2	2					TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304
D2003-035	T2003-035	24.7	27.00	2	2					TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304
D2003-037	T2003-037	24.81	23.38	2	2					TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304
D2003-039	T2003-039	34.0	34.00	2	2					TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304
D2003-041	T2003-041	6.0	5.88	2	2					TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304
D2003-043	T2003-043	11.7	10.75	2	2					TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304
D2003-045	T2003-045	3.50	2.44	2	2					TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304
D2003-047	T2003-047	5.56	5.56	2	2					TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304
D2003-049	T2003-049	33.2	34.00	2	2					TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304
D2003-077	T2003-077	N/A	6.25					1	1	JET	6061-T6 0.375 OD x 0.035 W	WWV-T-700/6
D2003-101	T2003-101	13.25	13.13					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWV-T-600/6
D2003-103	T2003-103	12.38	12.00					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWV-T-600/6
D2003-105	T2003-105	10.75	10.60					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWV-T-600/6
D2003-107	T2003-107	12.75	12.25					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWV-T-600/6
D2003-109	T2003-109	8.25	8.125		2	2				TUBE ASS'Y	6061-T6 0.500 OD x 0.035 W	WWV-T-600/6
D2003-111	T2003-111	4.75	4.625		2	2				TUBE ASS'Y	6061-T6 0.500 OD x 0.035 W	WWV-T-600/6
D2003-116	T2003-116	4.0								HEATSLEEVE	M2650-20 CRINKLE-SOFT	STRATOFLEX
D2003-120	T2003-120	4.0								HEATSLEEVE	M2650-16 CRINKLE-SOFT	STRATOFLEX
D2003-14	T2003-14	4.0								HEATSLEEVE	M2650-14 CRINKLE-SOFT	STRATOFLEX
D2003-16	T2003-16	4.0								HEATSLEEVE	M2650-16 CRINKLE-SOFT	STRATOFLEX
D2003-205	T2003-205	9.75	9.60					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWV-T-700/6
D2003-207	T2003-207	3.75	3.75					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWV-T-700/6

**DART**

DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA
CHECKED	APPROVED	DRAWING NO. D2003
DATE	99.06.08	REV. B SHEET 2 OF 2 SCALE TITLE 206 CABIN HEATER TUBE ASSEMBLIES NTS

**RELEASED**  
99.06.08 KE

## Notes:

- (1) USE STRATOFLEX M2650-6 CRINKLE-SOFT HEATSLEEVE.
- (2) TUBING ASSEMBLIES TO BE CUT AND BENT IN ACCORDANCE WITH TEMPLATES.
- (3) TUBES TO BE FLARED 30° TO MATE WITH FITTINGS MADE TO MS33514.
- (4) ENSURE SEAMLESS TUBING IS USED.
- (5) INSTALL HEATSLEEVE OVER ALL TUBES WITH A DESIGNATED LENGTH OF HEATSLEEVE PER THE PARTS LIST.
- (6) 5052 (WW-T-700/4) TUBING MAY BE SUBSTITUTED WHEN 6061 TUBING IS NOT AVAILABLE.
- (7) 0.049 WALL THICKNESS CRES TUBING MAY BE SUBSTITUTED WHEN 0.035 IS NOT AVAILABLE.
- (8) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.

**UNDER REVIEW**~~06.08.21 CB~~

~~Some flat lengths~~  
~~were wrong~~

CB  
06.12.13

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WORK ORDER  
NO. 29935

